Electronic appendix A

In our basic model, for $s < 0$,

$$\hat{q} = \begin{cases} \dfrac{h|s| - m(2h-1)|s| - \sqrt{h^2 s^2 - 2m(1-m)(2h-1)|s| - m^2(2h-1)s^2}}{2(1-m)(2h-1)|s|} & \text{if } m \leq m^*, \\[2ex] 1 & \text{if } m > m^*, \end{cases}$$

$$m^* = \begin{cases} \dfrac{2(1-h)|s|}{1-h|s|} & \text{if } h \leq h^*, \\[2ex] \dfrac{2h-1-\sqrt{(2h-1)(2h-1-h^2|s|(2-|s|))}}{(2h-1)(2-|s|)} & \text{if } h > h^*, \end{cases}$$

and

$$h^* = 2 - \frac{3}{2|s|} + \sqrt{2 - \frac{4}{|s|} + \frac{9}{4s^2}}.$$

(For $h = 1/2$,

$$\hat{q} = \begin{cases} \dfrac{m}{2}\left(\dfrac{2}{|s|} - 1\right), & \text{if } m \leq m^*, \\[2ex] 1 & \text{if } m \geq m^*.) \end{cases}$$

Note that $h^* > 2/3$. For $h > h^*$,

$$\breve{q} = \frac{h|s| - m(2h-1)|s| + \sqrt{h^2 s^2 - 2m(1-m)(2h-1)|s| - m^2(2h-1)s^2}}{2(1-m)(2h-1)|s|}$$

and

$$m^\dagger = \frac{2(1-h)|s|}{1-h|s|}.$$

Note that $\breve{q} \geq 1/2$.